

100-100-100

100-100-100

100-100-100

100-100-100

# **Web-based Youth Forum Application (WBYFA)**

A thesis submitted to the Graduate School in partial fulfilment of the requirements for the degree

Master of Science (Information Technology)

Universiti Utara Malaysia

By

Mostafa Ahmed Alksher

(Matric No: 89014)

© Mostafa Ahmed Alksher, 2007

All rights reserved



**KOLEJ SASTERA DAN SAINS**  
**(College of Arts and Sciences)**  
**Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PROJEK**  
**(Certificate of Project Paper)**

Saya, yang bertandatangan, memperakukan bahawa  
(I, the undersigned, certify that)

**MOSTAFA AHMED ALKSHER**

calon untuk Ijazah  
(candidate for the degree of) **MSc. (Information Technology)**

telah mengemukakan kertas projek yang bertajuk  
(has presented his/her project paper of the following title)

**WEB-BASED YOUTH FORUM APPLICATION**

seperti yang tercatat di muka surat tajuk dan kulit kertas projek  
(as it appears on the title page and front cover of project paper)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan  
dan meliputi bidang ilmu dengan memuaskan.  
(that the project paper acceptable in form and content, and that a satisfactory  
knowledge of the field is covered by the project paper).

Nama Penyelia Utama  
(Name of Main Supervisor): **ASSOC. PROF. DR. WAN ROZAINI SHEIK OSMAN**

Tandatangan  
(Signature)

: Rozaini

Tarikh  
(Date)

: 15/5/08

## **PERMISSION TO USE**

In presenting this thesis in partial fulfilment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence by the Dean of the Graduate School. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia (UUM) for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to

**Dean of Graduate School  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darul Aman.**

## **ABSTRACT**

Web-based forum is an application through the internet to facilitate the process of discussions and exchange of ideas. It is also referred to as online forums, message boards, discussion groups, and discussion forums. Youth can play a role in shaping their societies of immense diversity through the means of communication and participation, and sharing ideas. Therefore, this study leads to develop a web-based forum application to help young people express themselves and their needs, and desires. The requirements of the web-based application are identified from the students in UUM who are in the similar age group, design the application, and a prototype to implement the design.

## ACKNOWLEDGEMENT

### *By the Name of Allah, the Most Gracious and the Most Merciful*

First, I would like to express my appreciation to Allah, the Most Merciful and, the Most Compassionate who has granted me the ability and willing to start and complete this study. I do pray to His Greatness to inspire and enable me to continue the work for the benefits of humanity. My most profound thankfulness goes to my supervisor Assoc Prof Dr. Wan Rozaini Binti Sheik Osman for her scientifically proven and creativity encouraging guidance. Honestly, she has been all the time center of inspiration and guidance. I'm gratefully and deeply thank her for her support and cooperation as being equipped to provide her best help. My thanks also go to all the lecturers who helped me to collect my data during their classes, Prof Dr Ku Rohana, Mdm Nur Faziana, Dr. Nur Liayli and Mr Ahmed Hisham. *"May Allah bless all of them"*

Last but not least, I wish to thank all my dearest family members, especially Dad, Mum, and my family. I dedicate my admiration and thanks to my lovely wife who has sacrificed herself and supported me to the completion of the project. Also I dedicate my love to my little son *"AHMED"* who made the smile to my face during the whole study period. My demonstrative appreciations are to all my friends especially (Abdulsalam Masoud), colleagues, all FTM staff, and everyone who has put the hand either directly or indirectly to complete this project.

## TABLE OF CONTENT

|                             |     |
|-----------------------------|-----|
| PERMISSION TO USE.....      | I   |
| ABSTRACT .....              | II  |
| ACKNOWLEDGEMENT .....       | III |
| TABLE OF CONTENTS.....      | IV  |
| LIST OF FIGURES .....       | VII |
| LIST OF TABLES.....         | IX  |
| LIST OF ABBREVIATIONS ..... | X   |

### CHAPTER1 INTRODUCTION

|                                     |   |
|-------------------------------------|---|
| 1.1 Background.....                 |   |
| 1.2 Problem Statement.....          | 3 |
| 1.3 Research Objectives .....       | 4 |
| 1.4 Scope of the Study .....        | 4 |
| 1.5 Significance Of The Study ..... | 5 |
| 1.6 Organization Of The Report..... | 5 |
| 1.6 Summary .....                   | 6 |

### CHAPTER2 LITERATURE REVIW

|   |   |
|---|---|
| 2.1 Overview of the literature review ..... | 7 |
| 2.2 Definition of terms.....                | 7 |
| 2.2.1 Definition of youth.....              | 7 |
| 2.2.2 Web-based application.....            | 7 |

|  |           |
|--|-----------|
| 2.2.3 Web-based Information System.....                              | 7         |
| 2.2.4 Definition of Forum.....                                       | 7         |
| 2.2.5 Web-based Forum System.....                                    | 7         |
| <b>2.3 Youth development.....</b>                                    | <b>10</b> |
| 2.3.1 Youth Development Plan.....                                    | 13        |
| 2.3.2 Youth and ICT for Development.....                             | 15        |
| <b>2.4 Rural development and ICT.....</b>                            | <b>16</b> |
| <b>2.5 Rural youth.....</b>  | <b>18</b> |
| <b>2.6 The web-based information system application .....</b>        | <b>19</b> |
| <b>2.7 The web-based application and design of a prototype .....</b> | <b>20</b> |
| <b>2.8 Related works .....</b>                                       | <b>21</b> |
| <b>2.8 Summary .....</b>   | <b>23</b> |
| <br><b>CHAPTER3 RESEACH METHODOLOY</b>                               |           |
| <b>3.1 Introduction .....</b>  | <b>24</b> |
| 3.1.1 Awareness of problem.....                                      | 25        |
| 3.1.2 Suggestion.....  | 26        |
| 3.1.3 Development.....   | 26        |
| 3.1.4 Evaluation.....  | 27        |
| 3.1.5 Conclusion.....  | 27        |
| <b>3.2 Summary of the chapter.....</b>                               | <b>28</b> |
| <br><b>CHAPTER4 ANALYSIS AND FINDINGS</b>                            |           |
| <b>4.1 Introduction.....</b>   | <b>29</b> |



|   |           |
|---|-----------|
| <b>4.2 Requirements of the system .....</b>           | <b>30</b> |
| <b>4.3 Requirements of the prototype design .....</b> | <b>38</b> |
| 4.3.1 Rational Rose Case Tool.....                    | 38        |
| 4.3.2 Unified Modeling Language.....                  | 39        |
| <b>4.4 Development of the prototype .....</b>         | <b>70</b> |
| 4.4.1 Object-oriented system analysis & design.....   | 70        |
| 4.4.2 Previw of the Prototype.....                    | 73        |
| <b>4.5 Usability testing .....</b>                    | <b>77</b> |
| <b>4.6 Conclusion.....</b>                            | <b>80</b> |
| <br><b>CHAPTER5 CONCLUSION AND RECOMMENDATION</b>     |           |
| <b>5.1 Finding.....</b>                               | <b>81</b> |
| <b>5.2 Conclusion .....</b>                           | <b>82</b> |
| <b>5.3 Limitation .....</b>                           | <b>83</b> |
| <b>5.4 Future work .....</b>                          | <b>83</b> |
| <b>References... ..</b>                               | <b>85</b> |

## LIST OF FIGURES

|                    |   |    |
|--------------------|---|----|
| <b>Figure 3.1</b>  | Design research cycle                     | 25 |
| <b>Figure 4.1</b>  | Gender                                    | 33 |
| <b>Figure 4.2</b>  | Age                                       | 33 |
| <b>Figure 4.3</b>  | Usage of the internet                     | 34 |
| <b>Figure 4.4</b>  | Purpose of the internet                   | 34 |
| <b>Figure 4.5</b>  | Purpose of browsing the internet by youth | 35 |
| <b>Figure 4.6</b>  | Development of the forum for youth        | 36 |
| <b>Figure 4.7</b>  | Benefits of the forum for youth           | 37 |
| <b>Figure 4.8</b>  | Outline of (WBYFA) Development Process    | 40 |
| <b>Figure 4.9</b>  | UML Use Case Diagram View                 | 43 |
| <b>Figure 4.10</b> | Login Use Case Diagram                    | 44 |
| <b>Figure 4.11</b> | View Forum Use Case Diagram               | 45 |
| <b>Figure 4.12</b> | New Registration Use Case Diagram         | 47 |
| <b>Figure 4.13</b> | Add Topic Use Case Diagram                | 49 |
| <b>Figure 4.14</b> | Reply Topic Use Case Diagram              | 51 |
| <b>Figure 4.15</b> | Post File Use Case Diagram                | 53 |
| <b>Figure 4.16</b> | Manage Profile Use Case Diagram           | 54 |
| <b>Figure 4.17</b> | Manage Forum Use Case Diagram             | 56 |
| <b>Figure 4.18</b> | Login Sequence diagram                    | 59 |

|                    |                                |    |
|--------------------|--------------------------------|----|
| <b>Figure 4.19</b> | New Register Sequence diagram  | 60 |
| <b>Figure 4.20</b> | Add Topic Sequence diagram     | 61 |
| <b>Figure 4.21</b> | Reply Topic Sequence diagram   | 63 |
| <b>Figure 4.22</b> | Post File Sequence diagram     | 64 |
| <b>Figure 4.23</b> | Manage Forum Sequence diagram  | 66 |
| <b>Figure 4.24</b> | Panel class diagram            | 69 |
| <b>Figure 4.25</b> | Controller class diagram       | 69 |
| <b>Figure 4.26</b> | Data Package class diagram     | 70 |
| <b>Figure 4.27</b> | Youth Forum interface          | 74 |
| <b>Figure 4.28</b> | The interface after login      | 75 |
| <b>Figure 4.29</b> | Manage youth profile interface | 75 |
| <b>Figure 4.30</b> | Forum Categories               | 76 |
| <b>Figure 4.31</b> | Add and reply topic form       | 77 |

## **LIST OF TABLES**

|                  |   |    |
|------------------|---|----|
| <b>Table 4.1</b> | TAM items: perceived usefulness & ease of use | 78 |
| <b>Table 4.2</b> | Mean and Percentage for perceived usefulness  | 79 |
| <b>Table 4.3</b> | Mean and Percentage for perceived ease of use | 80 |

## **LIST OF ABBREVIATIONS**

|              |   |
|--------------|---|
| <b>DOS</b>   | Department of Statistics                            |
| <b>HRSDC</b> | Human Resource & Social Development – Canada        |
| <b>ICT</b>   | Information and Communication Technology            |
| <b>MEWC</b>  | The Ministry of Energy and Water and Communications |
| <b>MOYS</b>  | The Ministry of Youth and Sports                    |
| <b>MYC</b>   | Malaysian Youth Council                             |
| <b>NGO</b>   | Non-Governmental Organizations                      |
| <b>NYCC</b>  | National Youth Consultative Council                 |
| <b>O-O</b>   | Object-Oriented                                     |
| <b>OOD</b>   | Object-Oriented and Design                          |
| <b>OOSAD</b> | Object-Oriented System Analysis and Design          |
| <b>OOAD</b>  | Object- Oriented Analysis and Design                |
| <b>RIC</b>   | Rural Internet Centres                              |
| <b>TAM</b>   | Technology Acceptance Model                         |
| <b>USP</b>   | Universal Service Provision                         |
| <b>UML</b>   | Unified Modelling Language                          |
| <b>UUM</b>   | University Utara Malaysia                           |
| <b>WBIS</b>  | Web-based information system                        |

**WBYFA** web-based Youth Forum application

**WWW** World Wide Web

# 【 CHAPTER 1 】

# CHAPTER 1

## INTRODUCTION

This chapter briefly explains the background of the study that mainly involves the requirements of youth in rural and identifying the web-based application which be useful for youth in rural. The statement of the problem, objectives, significance of the project and scope of the study are also introduced.

### 1.1 Background

Young people (youth) are often the leading innovators in the use and spread of information and communications technologies (*Global Knowledge, 2003*). They adapt quickly and are generally quite hungry for great quantities of information, locally and globally, that can be provided through emerging information and communication technologies (*World Youth Report, 2005*). The National Youth Development Policy of Malaysia defines youth as people aged between 15 and 40 years, and it also provides that the main focus of youth development programmes and activities in the country should be young people aged 18 to 25 years (*Kim, 2002*). According to The Ministry of Energy, Water and Communications (MEWC) (2007) Youth particularly in rural, is one of priority that the Malaysian government is seeking to improve their abilities and



The contents of  
the thesis is for  
internal user  
only

## References

- Ahmed, N. (2005). Youth & ICT as Agents for Change. [Issues Paper].
- Arrington, C. T., Rayhan, S. H., (2003). Enterprise Java and UML. Second Edition, Prentice Hall, ISBN: 0471386804
- Babar, M. A., Winkler, D., & Biffi, S. (2007). Evaluating the Usefulness and Ease of Use of a Groupware Tool for the Software Architecture Evaluation Process. Paper presented at the Empirical Software Engineering and Measurement, 2007. ESEM 2007. First International Symposium Madrid, Spain.
- Badaruddin, M. (2006). Planning for the Children of the Future The Case of Malaysia.
- Bage, L. 2004. Rural development: key to reaching the Millennium Development Goals. Retrieved April 2<sup>nd</sup>, 2008 from <http://www.ifad.org/events/op/2004/mdg.htm>
- Bodzin, A. M. & Park, J. C. (2000). A Study of Preservice Science Teachers' Interactions with a Web-Based Forum.
- Bruno, C. & Cazes, S. (1998) French youth unemployment; an overview, Employment and Training paper, 24 International Labor Organization Paris Gourieroux, C., Monfort, A and E. Renault: "Kullback Causality Measures", Annales d'Economie et de Statistiques, Vol 6.
- Choo, C. W. & Detlor, B. & Turnbull, D. (2000). Web Work: Information and Seeking Knowledge Work on the World Wide Web. Dordrecht, NL: Kluwer Academic Publishers.
- Dennis & Wixon, (2003). Evaluating usability methods: why the current literature fails the practitioner. In Interactions, 10 (4) ACM. pp. 28-34
- Daniel, J. (2004). EDUCATING RURAL PEOPLE: A LOW PRIORITY. Paper presented for the United Nations Educational, Scientific and Cultural Organization
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319-340.
- DOS, (1999). (*Department of Statistics* ). General Report of the Population Census Volume 1 & 2. Kuala Lumpur.

- Ermel, C. Holscher, K. & Kuske, S. & Ziemann, P. (2005). Animated Simulation of Integrated UML Behavioral Models based on Graph Transformation. Proceedings of the 2005 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC'05)
- Kelvin, C. K.W. & Fion, S. L. L. & Cynthia, F. K. L. & William, K.W. C. & Anders, I. M. & Jiming, L. (2007). "A Pilot Study on the Impact of the Web-based Essay Critiquing System on Writing at the Tertiary Level". Proceedings of the 2007 International Joint Conference on e-Commerce, e-Administration, e-Society, and e-Education, Hong Kong, 2007.
- Garai, A. & Shadrach B. (2006). Taking ICT to every Indian village: Opportunities and challenges. New Delhi: OneWorld South Asia xix, 133p.
- Global Knowledge, P. (2003). Youth: Building Knowledge Societies: Final Report and Recommendations to the Global Knowledge Partnership. *Presented at the Global Knowledge Action Summit on 9 March 2000*
- George, J. & Valacich, J. S. Hoffer, J. A. & Batra, D., (2004). Object-oriented Systems Analysis and Design. First Edition, Prentice Hall. ISBN: 9780131133266. 198p.
- George, J. & Valacich, J. S. Hoffer, J. A. & Batra, D., (2006). Object-oriented Systems Analysis and Design. Second Edition, Prentice Hall. ISBN: 9780132279000. pp. 221-229
- Heeks, R. (1999). Information and Communication technologies, Poverty and Development. Retrieved on Dec 22<sup>nd</sup>, 2007 from [http://www.sed.manchester.ac.uk/idpm/publications/wp/di/di\\_wp05.pdf](http://www.sed.manchester.ac.uk/idpm/publications/wp/di/di_wp05.pdf)
- HRSDC, (2005). (Human Resource & Social Development - Canada ). Youth One – Created by Youth, for Youth. Journal. Retrieved on Jan 20th, 2008 from <http://www.rhdsc.gc.ca/en/hip/lld/olt/Resources/toolkit/YouthOne.shtml>
- Jacklin, A. B. M. (2006). Manitoba creates website for rural youth. Published in the Western Producer, Aug 24, 2006.
- Jahanian, F. (2007). Student Forum. Paper presented at the 37th Annual IEEE/IFIP International Conference on Dependable Systems and Networks, IEEE, 0-7695-2855-4/07
- John, P. & Michael, P. (1999). A case study of the web-based information systems development.
- Kevin, W. & Abigail, M. (2002). Youth and Rural Livelihoods. Journal May 2002. Retrieved on Jan18, 2008 from [www.youthlivelihoods.info](http://www.youthlivelihoods.info)
- Kim, H.-S. (2002). Youth in Malaysia: A Review of the Youth Situation and National Policies and Programmes. Paper presented at the Economic and Social Commission for Asia and the Pacific, New York, 2002.

- Krejcie, R. V. & Morgan, D. W., (1970). Determining Sample Size for Research Activities, Educational and Psychological Measurement, 30, PP: 607-610.
- Kurtz, T., (2004). Software Assurance of Web-based Applications (SAWbA). Research plan approved for NASA Glenn Research Center.
- Larman, C. (2003). Applying UML and Patterns. "An introduction to object-oriented analysis and design and the unified process", Second Edition, Prentice Hall, pp. 4-17
- Mattmiller, B. (2006). Web's 'youth appeal' lost on campaigns Journal. Retrieved Jan 2<sup>nd</sup>, 2008 from <http://www.news.wisc.edu/13079>
- MEWC, 2007, (Ministry of Energy, Water & Communications). Bridging the Digital Divide in Malaysia Journal. Retrieved Dec 22<sup>nd</sup>, 2007 from <http://www.aspirasidigital.net.my/MainTemplate02.asp?contentid=3>
- Milton, M. & John, M. (2006). Building an Internet Governance Forum. Internet Governance Project . Retrieved Jan 21<sup>st</sup>, 2008 from <http://dcc.syr.edu/miscarticles/IGP-Forum.pdf>
- Nancy, V. & Kahler, J. & Cippoletti, S. (2005). Issues Facing Rural Youth: A Compendium of Research, Reports, and Public Opinion Polls
- Ober, I. (2000). More Meaningful UML Models. French RNRT Project No 98.S.02882000, IEEE. 0-7695-0918-5100
- O'Docherty, M. (2005). Object-Oriented Analysis and Design Understanding System Development with UML 2.0. John Wiley & Sons, Ltd.
- O'Sullivan, D.T.J., Keane, M.M. (2000) The Specification of a web Based Multimedia Information System for Building Appraisal. CIB W89 International Conference on Building Education and Research (BEAR2000). May 16-18 2000. Atlanta Georgia USA.
- Organero, M. M. & Kloos, C. D. (2007). Using Forums and Assessments as Motivational Tools in E-learning Courses: a Case Study. Presented in the 37th Frontiers in Education Conference, IEEE, 1-4244-1084-3/07
- Othman, S. (2005). The World Programme of Action for Youth. Paper presented at the The Plenary Meeting of the General Assembly, New York, Oct 6<sup>th</sup>, 2005.
- Oxford dictionary, (1984). The Oxford Illustrated Dictionary. Book Club Associates London. P 328.
- Pade, C. I., B. Mallinson, D. Sewry. (2006). "An exploration of the categories associated with ICT project sustainability in rural areas of developing countries: a case study of the

Dwesa project. *ACM International Conference Proceeding Series; Proceedings of the 2006 annual research conference of the South African institute of computer scientists and information technologists on IT research in developing* 204: 100 - 106.

- Patel, J. & Aghayere, A. (2006). Students' Perspective on the Impact of a Web-based Discussion Forum on Student Learning. Proceeding in the 36th ASEE/IEEE Frontiers in Education Conference.
- Peter, S. & Khairuddin, A. H. & Alvin Y. & Jayapragas G. & Hushairi Z. (2004). Community Informatics: Challenges in Bridging the Digital Divide. Work with Computing Systems, pp267-270 Kuala Lumpur.
- Pidutti, A. & Soujeole, A. A. de La. & Pakriswamy, E., (2000). Method and circuit for enabling rapid flux reversal in the coil of a write head associated with a computer disk drive. United State Patent, Vol. 10(7)
- Rinalia, A. R. (2003). *ICT for development success stories (youth.poverty.gender)*. Paper presented at the World Summit on the Information Society (WSIS), Geneva (Dec, 2003).
- Roger, W. H. (2007). Telecentre Evaluation in the Malaysian Context. Paper presented at the 5th International Conference on IT in Asia, Sarawak, Malaysia. Retrieved on Jan 10<sup>th</sup>, 2008 from <http://rogharris.org/temc.pdf>
- Roger, W. H. & Yogeesvaran, K. & Laura, W.Y. L. (2005). Telecentres for National e-Inclusion in Malaysia. Retrieved on Dec 20<sup>th</sup>, 2007 from [http://i4donline.net/ATF/2007/fullpapers/Roger\\_ATF07ABS113.pdf](http://i4donline.net/ATF/2007/fullpapers/Roger_ATF07ABS113.pdf).
- Rosenfeld, L. & Morville, P. (2002). Information Architecture for the World Wide Web, Second Edition, O'Reilly, ISBN 10: 0-596-00035-9
- Rozhan, M. I & Hanafi, A. (2004). Closing the Digital Divide in Malaysia - Catching Them Young. 1(1), pp 33-40.
- Saifuddin, A. (2005). Voice of youth on national youth policy. Formulation and implementation through new governance. Presented for Malaysian youth council.
- Shingi, P. M. & Singh, N. P. & Dhav, D. J. (2003). Rural Youth: Education, Occupation and Social Outlook. Abhinav Publications, ISBN:8170171180
- Sutton, B. B. (2007). Youth and ICT as Agent of Change Journal. Retrieved on Jan 9<sup>th</sup>, 2008 from <http://www.siteblog.org/?p=106>
- Sweeney, R. B. (2000). Utilizing the Rational Rose OOAD CASE tool for Visual Modeling using the UML in the Systems Analysis and Design Sequence. Proceedings of ISECON '2000, October 14-17, pp. 84-89

Takahashi, K. & Liang, E. (1997). Analysis and Design of Web-based Information Systems.

Retrieved on Dec 19th, 2007 from

<http://www.ra.ethz.ch/CDstore/www6/Technical/Paper245/PAPER245.html>

Takhteyev, Y. (2007). Using Foreign Forums. Proceedings of the 40th Hawaii International Conference on System Sciences – 2007, IEEE, 1530-1605/07

Uma, S., (2003). Research methods for business. A skill building approach. New York: John Wiley & sons Inc.

UNDESA, (2005). Issues Paper: Youth and ICT as Agents for Change, Global Alliance for ICT and Development, UNDESA, 2005.

United Nations, (2002). Review of the Youth Situation, Policies and Programmes in Asia and the Pacific. Journal.

United Nations, (2002). World population prospects: the 2002 Revision. Paper of human resources development statues of youth in the “Asia and Pacific Region”, New York, (2002).

Vaishnavi & Kuechler. (2004). Design Research in information system. Retrieved March 15th, 2007, from <http://www.isworld.org/Researchdesign/drisISworld.htm>

World Youth Report, (2005). Youth and Information and Communication Technologies (*ICT*), P311-P333.